

PARONYMY VERSUS HETERONYMY AS NEURONYMIC PRINCIPLES.

PRESIDENTIAL ADDRESS AT THE ELEVENTH ANNUAL MEETING
OF THE AMERICAN NEUROLOGICAL ASSOCIATION,
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THE double honor conferred upon me last year, in your selection of President and of Chairman of the Committee on Encephalic Nomenclature, I have ventured to interpret as a flattering encouragement from some, as a courteous challenge from others, to do my best—or worst—to win from this Association an acknowledgment of the existing imperfections of neurological language and a fuller consideration of the plans for its improvement which I have advocated during the past five years.

The need of some improvement in the nomenclature of the brain is practically admitted by all who, for a known part, deliberately propose a new name, or select an old name to the exclusion of others. By a few writers also it has been explicitly stated.

According to Pye-Smith (1, 162),¹ the "nomenclature of the brain stands most in need of revision."

One of the greatest of living anatomists makes the following distinct suggestion: "Whoever will carry out the application of neat, substantive names to the homologous parts and structures of the encephalon, as they may be ascensively determined, will perform a good work in true anatomy" (Owen, A, I, 294, note).

¹ For the mode of reference adopted in this article, see the Bibliographical List at its close.

So far as I am aware, neither the beginning nor the continuance of my own efforts has depended upon the precept or the example of others. Partly in private study, but yet more in laboratory and lecture-room instruction, there was gradually forced upon me the conviction that the current nomenclature is, to a large extent, an obstacle rather than an aid to the advancement and dissemination of knowledge concerning a complex organ; that, in short, excepting under unusually favorable conditions, the average student rises from a neurological discourse with the belief that, unless his organ of thought is gravely disordered, most of the terms employed are too long, and some mean the reverse of what they seem to express. With regard to the encephalic cavities in particular, I reiterate what I have said before, that every student would save time and exasperation of mind if the incongruous and misleading, quasi-descriptive terms, *first*, *second*, *third*, *fourth*, and *fifth ventricle*, could be replaced by totally meaningless, but easily remembered Chinese monosyllables, like *pran*, *pren*, *prin*, *pron*, and *prun*.

Erelong I became absolutely incapable of using the current names without hesitation and a desire to apologize for them, which seriously diminished the clearness of my thoughts and the readiness of my speech. This was notably the case in dealing with published figures and with the diagrams which students were required to make from their own preparations; according to the plan usually followed, there neither was nor could be uniformity in the names, much less in the abbreviations set against the parts.

Impelled, then, toward some change for the better, not by a desire to carry out an ideal scheme of reform, but by a wish to economize time and lighten the labors of earnest students, I have probably given to the nomenclature of the brain more attention than has been devoted to it by any other English-speaking anatomist. I say *English-speaking* to forestall comparison with two French writers whose efforts to modify nomenclature in accordance with preconceived plans have met the fate which sooner or later befalls innovations based upon theory rather than upon practical

experience. Chaussier's idea that the name of each muscle, for example, should accurately indicate all its relations, led him to frame a myonymy which is not only inapplicable to the same parts in many animals, but so ponderous as to be useless; and although Sarlandière's names for the few parts of the brain discussed by him are rarely more objectionable than, for instance (as translated), "medio-cerebral tubercula quadrigemina," yet hardly the most perfect nomenclature could be seriously considered when heralded by a "Preliminary Observation" like this: "I have perfectly satisfied myself that a knowledge of anatomy in all its parts, and even in its details, may be acquired in fifteen lessons only, each of two hours duration."

So far from assenting to the foregoing claim, I hold that there is no short, easy, or "royal road" to the anatomy of the brain; at the best it is long and hard; but I believe that it need not continue to be, as in the past, so perplexingly crooked and so full of verbal pitfalls and obstructions.

My general object has been to introduce a system of *neuronymy*¹ which *with a minimum of disturbance in the existing order of things, may insure greater accuracy and brevity, and facilitate the acquisition and communication of knowledge between neurologists of all nations, to a considerable degree in the present, and to a much greater degree for our successors.*

More specifically, the principal modifications proposed by me are indicated in the following extract from my first publication on the subject, a paper read at the meeting of the American Association for the Advancement of Science in Boston, August, 1880, and reported in the *Medical Record*, September 18, 1880 (41, 380):

"It is proposed to discard all vernacular names; to make a selection of the shorter technical [classical] ones; to abbreviate some by the omission of unessential words, and others by the substitution of prefixes for adjectives."

¹ The usefulness of *onym* (Gr. ὄνυμα, Latin *nomen*, a name) and its compounds in the exact discussion of nomenclatural questions was recognized by me in 1881 in the employment of *toponymy* and *organonymy*, and has been illustrated since by the introduction of a set of terms with especial reference to zoölogical writings by Dr. Elliott Coues (3). Most, if not all, of Dr. Coues' new words are equally applicable to anatomical nomenclature, and some of them (*mononym*, *polyonym*, etc.) are herein employed.

The application of these propositions has been hindered by the extraordinary number of recorded neuronyms to be dealt with. In contributing toward a new Medical Dictionary under the editorship of a learned member of the profession, I have obtained, during the past year, an alphabetical list of nearly all the names which have been applied to the parts of the central nervous system, together with at least one exact reference to a place of publication.¹ Allowing for some omissions and duplicates, in round numbers the names are as follows: Latin, 2,600; English, 1,300; German, 2,400; French, 1,800; Italian and Spanish, 900; total, 9,000. Upon the assumption that the number of parts designated by these names is not more than 500, (in reality it is considerably less,) it is evident that there are now on record many superfluous names in each language. Even if we eliminate those which are generally admitted to be obsolete, there remain numerous synonyms which are used occasionally or by individuals, and with which, therefore, the reader must be more or less acquainted.

Reserving for another occasion the consideration of how to dispose of the vast number of useless and worse than useless neuro-synonyms, I ask your attention for a moment to that feature of the names approved by me which seems to me most important and commendable.

From the lists of the names of the macroscopic parts of the brain published in 1880, 1881, 1882, and 1884,² it will be seen that:

(A.) Most of the names selected or introduced by me consist of a *single word each*; they are monomials, or, better, *mononyms*.

(B.) This feature of mononymy particularly characterizes the terms which are *most frequently employed* in anatomical and physiological discussions.

(C.) Many of these mononyms designate parts which constitute natural or conventional groups, and differences in relative position are indicated by the topical prefixes, *pro*, *post*, *supra*, *sub*, *medi*, etc.

¹ The task proved so unexpectedly great as to be incompatible with my regular duties, and most of the work was done by my wife.

² A partial list will be sent on application.

The advantages of mononyms over polyonyms were stated by me a year ago as follows: (1) brevity; (2) flexibility or capacity for inflection; (3) adaptation to uniform abbreviation; (4) capacity for assimilation into other languages. To these may be added, as closely connected with the last, that the employment of Latin polyonyms, even when familiar, imparts to a sentence a decidedly un-English look by reason of the reversed relative positions of the adjective and substantive.

Although my own convictions as to mononyms were formed independently, I think that the honor of enunciating the principle and carrying it into effect to a considerable extent must be ascribed to Professor Owen. In addition to *præcava*, *postcava*, and other combinations for various organs, Owen's names for the cerebral fissures and gyres are uniformly mononymic, as will be more fully shown at this meeting.¹

The superiority of single words over names of two or more words is distinctly stated by Pye-Smith (1, 155), but that writer, so far as appears, merely proposed to select the few already in existence, *pons*, etc., which would leave the vast majority of neural parts still burdened with names, both Latin and English, of two or more words each.

With this preliminary I pass to the proper subject of the present address. In the lists already mentioned, in the "Anatomical Technology," and in all but recent papers, the neuronyms are Latin in form, many of them obtrusively so; *the vocabulary is essentially Latin, and not English*. This feature is particularly noticeable in the terms proposed for the encephalic cavities, *mesocælia*, etc., and occasioned the comment in one of the first notices of the new nomenclature (*The Nation*, April 21, 1881) that "some of the terms savor of pedantry."

At that period my mind was so fully occupied with other and, I think, more essential features of the system, that the above remark made little impression, and the objection seemed, at most, slight in comparison with the objections to any perpetuation of the old methods. By degrees, how-

¹ In a paper (64) on the cerebral fissures, etc.

ever, I realized that to think and to speak, and especially to learn new things, is easier in one's own language than in any other; that upon a professedly English page any thing but English is objectionable, perhaps not always unavoidable, but, at best, a necessary evil; and that a vocabulary which, to the apparent objection of novelty, added the real one of exoticism, might not secure an impartial consideration of its merits in other respects.

Was it, then, necessary to return to the time-honored methods already in use?

These methods are two, characterized, the one by Latin phrases like *torcular Herophili*, *corpora quadrigemina*, and *iter a tertio ad quartum ventriculum*; the other by English translations thereof, such as the "wine-press of Herophilus," etc. The former of course, are open to the same objection of pedantry as the names proposed by me, with the disadvantage of length to offset our familiarity with some of them. The latter are, at first sight, more acceptable, especially to the laity, but I hope to be able to show that the systematic employment of such terms is undesirable from several points of view.

For convenience, in the present discussion vernacular names which are more or less precise translations of Latin names, or of names in any other language, may be called *heteronyms*, from the Greek *ἑτερόνυμος*; and *heteronymy* may be used either for the relation between such names, or for the system according to which they are employed or advocated.

Most English heteronyms, or vernacular translations of Latin names, are open to one or more of the following objections: literal inaccuracy, length, ambiguity, and lack of dignity. Length may be primarily a feature of the Latin name, but this makes the English no more acceptable. The reference to the mesocœle as "the aqueduct of Silvius, or, as it is better to call it, the passage from the fourth to the third ventricle," is surely the very apotheosis of heteronymic prolixity.

Heteronyms are apt to be ambiguous or misleading because the natural inference is that they are literally correct.

The swimming sea-turtle and the flying pterodactyl are easily accepted as *reptiles*, but they could hardly come under the vernacular equivalent, *creeping things*. No one objects to including the lamprey and lancelet under the vertebrate branch, but when the name "back-boned animals" is applied to them, one feels obliged to explain that they have neither backbone nor any other bone in their bodies. So with the brain; *genu, callosum and vermis*, are accepted in a conventional sense, whereas *knee, hard body*, and *worm* impress one as unnecessarily insisting upon features which are either non-existent or common to other parts. The rendering of a German designation of the pyramid as "anterior spinal column" (Putnam, A, 719) is perhaps as good an illustration as could be desired of the liability of heteronyms to be misleading.

Similar examples of the intrusive inaccuracy of literal translation have been furnished in substituting for a word having a conventional significance another which is synonymous only in certain respects. The grateful Frenchman's adjuration that God might pickle (preserve) his benefactor, had an exact parallel in the written answer of one of my students in Hygiene to the question respecting a certain mode of resuscitating the drowned: unmindful of the purely arbitrary use in anatomy of the adjective *false* as applied to the ribs not directly connected with the sternum, and thinking of the reverse of *real* hair and teeth, he recommended that pressure be applied to the "artificial ribs."

It is but a short step from heteronyms which are simply too long or too bald to such as fall but little short of being ridiculous. *Infundibulum* may mean funnel, and *thalamus opticus*, optic bed, but the terms are not attractive, and there seems to be no more reason for employing such homely vernacular phrases than for translating *Cuvier* into literal English and alluding to the great French naturalist as the Baron Wash-tub.

Similar difficulties in the way of systematic heteronymy apply to other languages in greater or less degree. Moreover, there is no likelihood that a name in one language

will suggest the corresponding one in another, or that either will suggest the Latin name; and there is much less probability that any two anatomists, even of the same nationality, will employ identical abbreviations. The chances are, indeed, that the same anatomist, upon the same plate, or even upon the same figure, may use abbreviations signifying in some cases Latin names, and in others vernacular names of an entirely different etymological character. For example, in Leuret and Gratiolet's Atlas, pl. xviii., fig. 2, *commissura anterior* and *tænia semicircularis* are indicated by *c. a.* and *t. s.*, while in close proximity are *c. o.* and *p. v.*, answering respectively to *couche optique* and *pilier de voute*.

Keeping in mind, then, the general object of reconciling the desire of every one for words in his own language with the preference of the professional anatomist for technical terms with which he has become familiar, or which he finds to be more exact, I reached the conclusion that the chances of their prompt and general acceptability would be materially enhanced by presenting the *technical, Latin names*, so far as possible, in *an English dress*, or with a *vernacular face and aspect*.

Lest it might appear that this idea of Anglicizing the Latin names is hasty and ill-considered, let me call your attention to publications in which it is more or less distinctly enunciated or carried out.

The paper on "Encephalic Nomenclature," (57) read before this Association a year ago, gave, as a chief advantage of single-word names, that "they are *assimilable*, or readily adopted into any language using the Roman alphabet"; in many cases (*fornix, calcar, delta, callosum*, etc.), no change is required, at least for English users; with others (*commissura*, commissure, *pyramis*, pyramid, *mesocælia*, mesocœle, *hippocampus*, hippocamp, etc.) the changes are so slight as to mislead none. In the "Cartwright Lectures" for 1884 (56) many of the names were Anglicized. More recently (63) these English forms were systematically employed, and special attention was asked to the case of the frequently recurring names for the brain (encephal) and spinal cord (myel).

Upon the present occasion I desire to set forth the char-

acter of the proposed compromise between the purely classical and the strictly vernacular tendencies of nomenclature, to formulate its rules and conditions, to assign it a name, and to show to what extent it has been, or may be, applied to neuronymy.

The Latin *canalis* may be rendered into English either by the definitions *water-course*, *aqueduct*, *tube*, *trough*, etc., which mean the same thing, but which have no kinship or resemblance to the word *canalis*, and, according to the definition framed above, are simply heteronyms; or, by the English *canal*, which not only means the same thing, but is practically the same word in an English dress; the Italian word is *canale*, but in German, French, and Spanish it is still *canal*.

All of these words are, as it were, geographical varieties of the Latin *canalis* and of one another, sometimes recognizable as belonging to one country rather than to another by their spelling, sometimes only from their context or pronunciation.

What name shall be applied to the relation between these words? Not to weary this Association with etymological details, suffice it to say that, after inquiry and correspondence extending over several months, I have failed to find in actual use any word, in any language, which seems to have been framed or employed with special reference to this particular point. The natural correlative of *heteronymy* is *homonymy*, and *homosynonymy* early occurred to me. But the former has been used hitherto exclusively of words having different significations, while *synonymy* is expressly restricted in its application to words in one and the same language. When it seemed almost inevitable that a new term should be coined, my colleague, Prof. Flagg, made the timely suggestion of *paronymy*, from the Greek *παρωνυμία*, the formation of one word from another by inflection or a slight change.¹

For the sake of clearly discriminating between the various compounds of *onym* which are referred to in this paper, the

¹ *Isonymy* was also suggested by my colleague, Prof. Shackford, but not until after *paronymy* had been published.

English word *organ* may be taken as an example equally familiar and striking. *Organ*, a portion of the body, is the *homonym* of *organ* (Anglo-Saxon), a musical instrument; it is the *synonym* of the English word, *part*; the *heteronym* of the Latin *pars*, and the *paronym* of the Greek ὄργανον, the Latin *organum*, the French *organe*, the Italian *organo*, and the German *organ*.

Many of the Latin names employed by me, and their English equivalents, do not occur in the dictionaries of those languages, but the principle involved is linguistic and general rather than special and scientific, and I have endeavored to ascertain the prevailing practice respecting words in common use.

The conversion of a Latin word into its English paronym is commonly effected in one of the following ways:

(a) The nominative is adopted without change in either singular or plural—*e. g.*, *basis*, *crisis*, *series*.

(b) The singular is unaltered, but the plural has an English form—*e. g.*, *index*, *indexes* (not *indices*); *peninsula*, *peninsulas* (not *peninsulæ*); *memorandum*, *memorandums* (not *memoranda*). In like manner the Hebrew words *cherub* and *seraph* are treated as English words, and pluralized as *cherubs* and *seraphs* rather than, according to the Hebrew idiom, *cherubim* and *seraphim*.

(c) The ultima is dropped from the nominative, leaving the stem entire—*e. g.*, *canalis*, *canal*.

(d) The ultima *a* or *ma* is dropped from the nominative, leaving less than the original stem—*e. g.*, *diaphragma*, *gen. diaphragmatis*, *diaphragm*; *epigramma*, *epigram*; *programma*, *program*.

(e) The ultima is dropped from the genitive, leaving the stem, which may be a little longer than the nominative—*e. g.*, *positio*, *positionis*, *position*; *centurion*, etc.

(f) A diminutive dissyllable containing an *l* is reduced to a monosyllable, but the vowel of the ultima becomes a silent *e*, and the vowel of the penult may be elided—*e. g.*, *plumula*, *plumule*; *receptaculum*, *receptacle*; etc.

(g) The ultima is reduced to a silent *e*—*e. g.*, *scala*, *scale*; *ingratus*, *ingrate*; etc.

(h) The trilateral *rum* becomes the biliteral *er*—e. g., *specter*, *meter*, *theater*.¹

(i) A final *s* after *n* commonly becomes *t*—e. g., *respondens*, *respondent*; etc.

(j) The Latin diphthong *æ* becomes *e*, as in the conversion of the prefix *præ* into *pre* in many words. In like manner, though less uniformly, *æ* becomes *e*.

There are abundant examples of paronymy among the names of other parts of the body, and I select only a few of the more common, which also exemplify the proposed extension of the system to neuronymy: *ovarium*, ovary; *oviductus*, oviduct; *sternebra*, sterneber; *musculus*, muscle; *nervus*, nerve; *acetabulum*, acetable; *umbilicus*, umbilic; *diaphragma*, diaphragm; *stomachus*, stomach; *carapax*, carapace; *leucocytus*, leucocyte; *palpus*, palp; etc.

In connection with these more familiar examples of paronymy it is to be noted, first, that, for the most part, the changes that occur are in the direction of *reducing the number of syllables or of letters, or of both*. What was said by Horne Tooke of the latter is equally true of the former; syllables, like "letters, tend to drop off in a long march." Second, as might be expected, these reductions have been applied more generally to longer words—for example, *penultima* and *antepenultima* have become *penult* and *antepenult*, while the less cumbersome *ultima* is left untouched.

What I propose and advocate is simply this:

That, so far as possible, for each part of the neuron (central nervous system) there be found or made a name consisting of a single Latin word; that for each such Latin name there be found or made an English equivalent—not a translation, but a paronym; and that, in obtaining these names, Latin and English, due regard be had both to existing nomenclatures and to the established rules of etymological conversion.

The origin and basis of each English neuronym is

¹ The ending *re* is distinctly French, as is practically admitted by those who write *maneuverer* and *maneuvering* even when they insist upon *maneuvre*. There is no more reason why an English writer should use the French *metre* than that he should select the German or Latin *metrum*, the Greek *μέτρον*, metron, or the Italian *metro*.

assumed to be a Latin word. This may be (*a*) primarily Latin, *e. g.*, *porta*; or (*b*) derived from the Greek and in use by the Romans, *e. g.*, *aula*; or (*c*) so derived in later times; or (*d*) formed from some modern language in accordance with recognized rules, as *e. g.*, *cimbria*.

Whatever, then, may be its origin, direct or indirect, the English neuronym has a Latin form; it is Latiniform; but it presents, for the time, an English face and dress.

It will be noted that to carry out the principle of paronymy it is necessary first to select the Latin names. The principles on which I believe such selections should be based have been presented already before this Association and elsewhere; suffice it now to call attention to the fact that *paronymy is applicable only to names of a single word each*, and that hence its acceptance as a desirable principle will in itself aid practically and strongly in the choice of terms from among those now existing and in the formation of new ones.

The paronymisation of the neuronyms employed by me in accordance with the rules illustrated by the foregoing examples will be found, upon the whole, to present no difficulties. *Cælia* and its compounds become *cæle*, pl. *cœles*, etc.; *tela*, *tele*, *teles*, etc.; *plexus*, *plex*, *plexes*, etc.; *pedunculus*, *peduncle*; *commissura*, *commissure*; *hippocampus*, *hippocamp*; *cornu* is pluralized as an English word, *cornus*; *perforatus* and *geniculatum* become *perforate* and *geniculate*; *valvula* becomes *valvule*; *pyramis*, *pyramid*; *opticus*, *optic*, pl. *optics*; *oliva*, *olive*; *calcar*, *arbor*, *iter*, and most words ending in *a* are unchanged and have plurals in the English form.

The words *myelon* and *encephalon* require special consideration on account of their significance and frequent employment. In a recent paper (63, 354), I suggested that the English forms of the Greek *μυελος* and *ἐνκεφαλος* should be *myel* and *encephal*, these words being not only shorter than those in common use, but also comprising the part of each which is retained in composition or inflection, as in *myelitis*, *encephalic*, etc. It was also shown that, instead of the unwieldy adjective, *myelonal*, the analogy of *encephalic*

would give us *myelic*. I wish now merely to reaffirm my belief in the correctness of the statements and views advanced in the paper referred to, and to strengthen the position there taken by what seem to me to be a sound rule for our guidance, and an appropriate example.

The rule is, that in all etymological matters, excepting where definite and sufficient reasons to the contrary can be adduced, scientists should conform to the customs and principles of more strictly literary writers, who are supposed to give particular and expert attention to such subjects. The example is that of the analogous Greek word, ἄγγελος, which becomes *angelus* in Latin and *angel* in English, the corresponding adjectives being *angelicus* and *angelic*. Similar conditions prevail with *monolith* from *monolithus* and *μονολιθος* and doubtless other cases will occur to members of this Association.

As among common words, however, there are exceptions to the general rules as to the methods of paronymisation and even as to the application of the principle at all. For example, while the English paronyms of *aula* and *porta* would be *hall* and *port*, in the first place the Latin words are none too long, and in the second, the English forms would be ambiguous.

Exceptions also may well be admitted in the cases of *enteron*, *neuron*, and *axon*. The first has been in use, both alone and in combination, as a mononymic equivalent for *alimentary canal*; the other two were proposed by me last summer (56, 114) for the nervous axis and for the mesal, skeletal axis of the body, whether bone, cartilage, or membrane. The strictly English paronyms, *enter*, *neur*, and *ax*, would be more or less ambiguous, and the monosyllabism of the two latter is as objectionable as the sesquipedalian polysyllabism of some other words.

Certain paronymic changes are to be avoided on account of some undignified suggestion connected therewith; for example, *medic* is the legitimate paronym of *medicus*, but is commonly regarded as slang, and *umbilic*, though not only legitimate but in actual use, is not looked upon with favor. In like manner, though *cerebell* is the natural paronym of

cerebellum, it sounds too much like the adjective *cerebral*, and like the personal name *Sarah Bell*, and in proposing, nearly a year ago (56, 114) for the polyonyms *axis neuralis* and *cerebro-spinal axis* the mononym *neuron* rather than *neurum*, I had in mind the obvious objection to a term so nearly resembling the name of an intoxicating liquor.

In a few cases there will, doubtless, be a difference of opinion or taste with respect to the form of the plural. For example, as we retain the Latin *alumni*, so we may prefer to say *thalami* rather than *thalamuses*; but with shorter words like *crus*, *vagus*, etc., there seem to be good precedents for English plurals in *rebuses*, *omnibuses*, etc. So, too, the plurals *abdomens* and *albumens* justify *ponses* and *foramens*; and the latter has been employed already.

Leaving details to be determined in accordance with exact precedents, by your own Committee or perhaps by a more comprehensive body, I ask your attention to a few points of general interest.

In the first place, the method of naturalizing Latin terms into English is by no means new; our language is full of paronyms, and the very word *paronymy*, were there a Latin word *paronomia*, from the Greek *παρωνομία*, would exemplify one of the most common changes in the termination of abstract nouns. The novelty consists simply in recognizing the method more distinctly, in giving it a name and insisting upon its usefulness as a neuronymic principle as against the heteronymy sometimes followed.

In the second place, the principle is equally applicable to other branches of organonymy. *Stomach* has been mentioned; *spleen* may be added, and, as will be shown later in this meeting, the Latin adjectives applied to arteries, veins, and nerves (*brachial*, *carotid*, *jugular*, *ulnar*, etc.) are almost invariably paronyms of classical originals. But, while it might be easier to demonstrate the practical working of the principle of paronymy with any other part of the body, the central nervous system has seemed to me better suited to begin upon, partly because of the greater need of reform, already mentioned, partly because the number of neurologists is comparatively small, and their general scholarship and authority exceptionally high.

Thirdly, although the subject has been regarded thus far from the standpoint of the English-speaking anatomist only, it must have already occurred to my hearers that unless the system is likewise applicable to the other languages in which most neurological contributions are published, it may rightly be objected to as a "one-sided re-baptism."

There are, however, many words which present similar or even identical aspects in several different languages. Familiar examples of what may be called *complete paronymy* are the following: L. *canalis*, E., F., and G., *canal*, I., *canale*; L. *centaurus*, E. and G. *centaur*, F., *centaure*; *præstigium*, *programma*, *musculus*, *nervus*, etc. A very perfect one, which is likewise a neural term, is *pyramid*, Gr. *πυραμῖς*, L. *pyramis*, F. and G. *pyramide*, I. *piramide*. Among other neural terms, following strictly the analogy of *ὄργανον*, L. *organum*, E. and G., *organ*, F., *organe*, and I. *organo*, we have *ἐνκέφαλος* L. *encephalum*, E. *encephal*, G. *encefal*, F., *encephale*, I. *encefalo*.

There seems to be no assignable limit to the application of paronymy to the English, French, Italian and Spanish anatomical vocabularies, but with the German there are three obstacles: *First*, the less intimate relations of that language to the Latin; *second*, the very general adoption of vernacular words or compounds for neural parts; *third*, the apparent reluctance of some German anatomists to recognize the desirability of making smooth the way of searchers after knowledge. Nevertheless, modern neurological literature contains so many purely Latin words (*e. g.*, *centrum*) whose adoption into the language is practically admitted either by the use of German plurals or by combination with vernacular words that the ingenuity of German etymologists may be trusted to overcome the difficulties above mentioned.

Since each paronym suggests the original Latin name, the latter forms a bond of intelligence between writers and readers of different nationalities. Hence, writing for English readers primarily, if one prefers to employ English words as far as possible, he may retain the native aspect of his pages, and yet assume that his technical terms and their abbreviations will be recognized and understood by others.

With those who realize the desirability of a common medium of communication throughout the civilized world, it will not seem a defect in the system here proposed that any educated anatomist, whether English or French, Italian, Spanish, or German, can understand not only the original mononymic names, at least by the aid of a Latin dictionary, but also, almost as generally and readily, the paronyms of these names in either of the languages mentioned; since this gives ground for hope that, in the course of time, *some one of the paronyms of any given name may be everywhere accepted to the exclusion of all the rest, and thus pave the way to the establishment, in science at least, of a universal language, combining with the perfection of Latin construction a far greater richness and precision.*

To recapitulate, my plan for the amendment of neurological nomenclature is, as follows:

A. *The prompt and radical elimination of at least nine tenths of the names now on record.*¹

B. *The selection or formation of appropriate, and if possible, pre-existing mononyms, for all the parts.*

C. *The agreement among anatomists of all nations to employ, not heteronyms, but paronyms, of these Latin terms formed in accordance with the genius of each language.*

Under paronymy there can be seldom more than one equivalent in any language for a given Latin name, and the names in all languages will be practically identical. And although, in some cases the formation of these paronyms may involve the apparent coining of a new word, yet they are not really new, and no more are possible. The heteronymic neuronymy of the past has been like an unrestrained conflagration sweeping in all directions and with no natural limit. Paronymy may, as it were, require the destruction of a few houses, and thus simulate the very thing we are trying to suppress, but in itself it sets an impassable barrier to the progress of the objectionable condition.

Excepting, on the one hand, in addition to those of

¹ For example, at least 23 names begin with the word *Tania*; I have proposed to restrict that word to a single part, *Tania semicircularis*, so called, and thus secure a restricted mononym, at the same time getting rid of 22 Latin synonyms, not to mention all the heteronyms in other languages.

Owen and Pye-Smith, a few felicitous mononyms which seem to have been such by accident rather than from design, and allowing, on the other, for several errors and inconsistencies due to haste or ignorance on my part, the distinctions between all other neuronymic vocabularies, ancient or modern, and that which I have advocated and employed during the past five years may be fairly expressed by describing the latter as consisting of names which are for the most part :

Designatory rather than descriptive.

Vertebrate " " human.

Restricted " " unrestricted.¹

Correlate " " irrelate.

Co-ordinate " " inco-ordinate.

Classical " " vernacular in origin.

Micronymic " " macronymic.

Dissyllabic or trisyllabic rather than monosyllabic or polysyllabic.²

Mononymic rather than polyonymic.

Paronymic " " heteronymic.

Of the foregoing characters it is to be noted that the first five regard more particularly the parts themselves and their relations, while the others concern primarily the names ; the former are logical characters, the latter etymological.

I ask also attention to the fact that the above adjectives simply state characteristics, contrasted it is true, but with no distinct assumption of superiority on the part of the one vocabulary over the others ; hence the relative advantages of any pair of characters may be discussed irrespective of my personal belief that names such as are described in the first column are, as a rule, *euonyms*, while *caconymy* summarizes the attributes enumerated in the second.

That this system is practicable and "labor-saving" may be inferred from its prompt and more or less complete adoption by working neurologists like Spitzka of this Association, Osborn of Princeton, and Wright of Toronto, not to mention several successive classes of my immediate students. Should it prove permanently and generally acceptable, permit me to hope that it may be

¹ *Peduncle* and *fissure*, for example, apply only to parts of the cerebellum and cerebrum respectively.

² The new names proposed by me, *porta*, *aula*, *delta*, *rima*, *calia*, *terma*, etc., are indications of preference.

known as "the Cornell system," not simply in recognition of the aid in its elaboration which has been given by my colleagues and students in a university unhampered by tradition, but because, in accordance with the whole spirit of that institution, its most comprehensive and distinctive characteristics are its *practicality*, and—to use the word applied to it by the "professor and autocrat" (Holmes, I)—its *reasonableness*.

At the last meeting of this Association some objections to this nomenclature were ably and courteously offered; others have been published, and others again have occurred to me, but have not, so far as I know, appeared in print. If I do not discuss all these objections upon the present occasion it is partly because it would extend this address to an undesirable length, and partly because, after prolonged reflection upon them, putting aside any personal feeling in the matter, I believe that, all things considered—the future as well as the present and the past—they are not sufficient to outweigh the advantages of the proposed modifications.¹

I will mention one because its apparent force is much greater than its real; namely, that the proposed system involves a still farther addition to the list of "burdensome neologisms."

But it is to be noted, as has been stated on previous occasions, that, excepting the comparatively small number of cases in which parts were really new or previously inadequately discriminated, *nearly all of my apparently new names are merely old and well-known terms under such thin disguises as translation, combination, or abridgment*. In one sense, *medicommissura* may be a new word, but it is really only the two words *commissura* and *media* joined into one, and not properly to be regarded as a new name, a neonym, at all. According to the letter of the law I might be convicted of neologism, but its spirit would acquit me of neonymy in any unusual or unjustifiable degree.

¹ In a note (*The Medical Record* for August 1st, p. 139.) I claim that my position is strictly intermediate between the classicism which may appear pedantic, and the vernacularism (heteronymy) which may be undignified. As a not unhappy mean between two extremes I am reminded of Lord John Russell, who "knew he was right because all parties found fault with him."

Still less is the objection sound in respect to the apparent additions to the vocabulary due to the application of the principle of paronymy to my own or other names. To say *medicommissure* instead of *medicommissura*, or *postperforate* instead of *postperforatus* is hardly more coining a new word than it is to employ a previously unused but regularly formed case of a noun or tense of a verb.

To the unniversal objection that any change at all is troublesome—to *us*—and that we are not called upon to inconvenience ourselves for the sake of posterity, since “posterity has done nothing for us,” it may be replied, that to maintain that “whatever is, is right,” and not to be improved, is as shortsighted as the opposite doctrine that whatever is, is wrong and not to be endured. To my mind, even less commendable than the acceptance of a poor name because it is new, is the rejection of a good one for the same reason.

The adage, “What is everybody’s business is nobody’s business,” has been well exemplified in the history of neuronymy. Has the result of the “let alone principle” been satisfactory? Is there any well-educated, working neurologist who is really satisfied with the English neuronymy in general, or with his own particular vocabulary?

It was lately remarked by President—better known as Professor—Jordan, of the Indiana University, whom I am proud to claim as a former pupil, that “in matters of higher education, supply must precede the demand.” Should it not be so with scientific nomenclature, with the language of exact knowledge? Should not, for example, the editors of dictionaries distinctly take ground against certain objectionable features, even though they be common, and as decidedly in favor of improvements, even when little known? Should not special organizations employ their conceded authority to encourage or restrain, carefully and wisely, of course, the desirable or undesirable tendencies of the current terminology in their several departments? Yet, even should I succeed in gaining from this Association an approval of the general plan of employing, as far as practicable, English paronyms of Latin mononyms, I am not so

sanguine as to anticipate for others any immediate or considerable inconvenience from the too rapid progress of neuronymic reform. Whatever may be the general pressure from students and the public, definite innovations are rarely made without the sanction, or at least the toleration, of those who are most inconvenienced by any departures from custom. The beginner can learn the new terms even more easily than the old, and at any rate he has nothing to forget. But the trained anatomist shrinks from an unfamiliar word as from an unworn boot; the trials of his own pupilage are but vaguely remembered; each day there seems more to be done, and less time in which to do it; nor is it to be expected that he will be attracted spontaneously toward the consideration that his own personal convenience and preference, and even those of all his distinguished contemporaries, should be held of little moment as compared with the advantages which reform may insure to the vastly more numerous anatomical workers of the future.

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